FOREIGN CROPS AND MARKETS.

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Feature of this Issue - FERTILIZERS. (PART I.)

CROP PROSPECTS

CEREALS

April weather in Europe appears to have been rainy and cold, judging from scattered observations coming from Spain, Belgium, and the Netherlands. Spring crops are about two weeks late and condition of winter cereals is below average in Belgium and the Netherlands. The details by countries as reported by the International Institute of Agriculture follow:

In Spain the month of April was generally rainy, and there was some flood damage to cereal crop in the minor producing regions. The more important producing regions report crops in good condition.

In Belgium the weather has been damp and cold though not unfavorable to winter crops. Spring cereals are about two weeks late. Rye condition is average but wheat is 5 points below.

In the Netherlands the weather has been unfavorable to winter crops and spring crops are very late. The condition is below average.

Condition of crops in Germany on May 1 was above average for spelt, but slightly below for barley and rye, according to a radiogram from the Agricultural Commissioner in Berlin. Expressed in a system where 1 is best, 3 average, and 5 poorest, the May 1 condition was, spelt 2.7, rye 3.4, and barley 3.3. No condition figure was given for winter wheat.

Although the acreage planted to winter cereals has not been estimated in absolute figures by the German Ministry of Agriculture, they estimate the abandonment due to winter killing as follows: Wheat 5-1/2 per cent, spelt 2-1/2 per cent, rye 9-1/2 per cent, barley 7 per cent.

INDIAN WHEAT

Broomhall reports that the wheat just harvested in India is of good quality and the crop is about the same as last year's production. The Indian Department of Statistics estimated the crop at 375,387,000 bushels on April 24.

NEW ZEALAND BUTTER

A cablegram from Consul Gunsaulus at Wellington says New Zealand stocks of butter graded for April were 4,662 tons compared with 4,457 tons during April last year. The amount of cheese was 5,495 tons compared with 5,785 tons last year. Stocks held in grading post on April 30 were butter 4,536 tons, cheese 5,038 tons compared with stocks March 31, butter 1,972 tons, cheese 4,979 tons. Weather and other conditions are favorable.

THE FERTILIZER SITUATION

The three chief elements to be considered in the fertilizer situation are nitrates, phosphates, and potash. Until very recent years when fixed nitrogen plants were established as a result of the war, Chile had a virtual monopoly in the production of nitrates.

The world's richest and best known potash deposits are found in Germany and Alsace. Though potash is available from other sources, these German and Alsatian deposits are now furnishing most of the world's supply.

Phosphate rock is found in large quantities in many countries, and its use in fertilizer depends largely upon the cost of processing.

Many other materials enter into the fertilizer situation. Stable manure is of no little importance, yet for the most part a measure of its use is not available. Bones, dried blood, and waste material from packing houses and fish canneries, are all utilized for fertilizing crops. Packing house by-products contain much bulk in comparison with the fertilizer content, and their use is declining.

NITRATES.

The consumption of all nitrogenous fertilizers has steadily increased during the past few years. Production has not kept pace with consumption, consequently, there has been a large reduction in stocks.

The Chilean nitrate industry is of unusual interest in connection with the world's supply of chemical fertilizer. For many years the world's supply of nitrate came from Chile. In 1913, it was estimated that Chile furnished about 54 per cent of the world's nitrogen; in 1922, this estimate had been decreased to 23 per cent. This relative shifting in source of supply has been due largely to an increased production of nitrates as a by-product of coke and coal gas industries, and due to an increase in the production of "fixed" nitrogen. Some writers estimate that the coal processing plants furnished 35 per cent of the world's supply in 1922, and that the air nitrogen industry furnished 41 per cent.

NITRATES, Cont'd.

Practically the only other source of nitrogenous fertilizers is from vegetable and animal waste materials, such as cottonseed meal, packer's tankage, fish scraps, etc. Large supplies of this material were formerly used in the manufacture of commercial fertilizer in the United States. This type of fertilizer, however, had only a small percentage of nitrogen per unit of weight, and there has been a considerable shift to the fertilizers having a higher nitrogenous content. The vegetable and animal waste materials which formerly went into fertilizer production are now utilized largely as feed for livestock and poultry.

POTASH

German production of potash in 1922 exceeded production for any year since 1911, and was perhaps the largest of any year on record. The final figures for 1923 have not been received, but in all probability were equal to production in 1922.

Germany occupies a position with reference to potash production similar to the Chile position in nitrate production. Before the war, it was generally considered that Germany had a virtual monopoly on the world's potash deposit. Potash reserves in Germany are certainly enormous, being estimated by some writers at 20 billion tons of crude potash salts.

Exclusive of the Alsace deposits now under French control but formerly a part of the German monopoly, no really great potash deposits have yet been found. War, which cut off the supply from Germany, was a stimulus to production in other countries. Several companies began operation in the Catalonian fields in Spain. Deposits in Eritrea and Tunis were exploited to some extent. Considerable effort was put forward in the United States. In 1917, the Bureau of Mines estimated that the production of potash in the United States was 32,000 tons, in 1918 that Bureau estimated the producing capacity at 125,000 tons annually.

The production in the United States is from a variety of sources, including the deposits at Searles Lake, California - the largest - salt brines in Nebraska, the Great Salt Lake, by-products of the cement industry, blast furnaces, from waste molasses, beet-sugar waste, etc. Only a few of the war-time projects have survived since the war, and the German and Alsace mines are now practically supplying the world.

PHOSPHATES

Large deposits of phosphorous-bearing materials in form ready to use for fertilizer are not now available, but rock phosphate deposits from which the greater part of the world's supply is obtained are large and widely scattered. The three most important producing countries are the United States, Tunis, and Algeria. Phosphate rock is also shipped in considerable quantities from numerous islands in the Pacific and Indian Oceans.

It does not appear that there is any shortage of rock phosphate resources. So far, probably only the richer and more accessible deposits are being worked.

Some writers estimate that 75 per cent of the phosphates used in fertilizers are secured from the phosphate rock. Of the other sources, the chief one is the utilization of basic slag from steel furnaces. This slag is an important element in Germany, Belgium, France, and the United Kingdom, but little of it is used for fertilizer manufacture in the United States. Guano, bone meal, and fish scraps offer an additional supply of phosphates.

WHEAT AND RYE, WINTER ACREAGE AND FORECASTS OF PRODUCTION FOR 1924 CROP COMPARED WITH ESTIMATES FOR 1922 AND 1923.

Item	1922	1923	1924	1924 Decrease from 1923	1924 Increase over 1923
WHEAT	Thousands	Thousands	Thousands	Per Cent	Per Cent
Area 12 countries reporting, acres	64,667	69,510	69,835	-	.5
United States (area harvested or to be harvested) acres	42,358	39,522	36,898	6.6	-
Total 13 countries reporting, acres	107,025	109,032	106,733	2.1	-
Production:					
United States (winter wheat) bushels	586,878	572,340	553,013	3.4	-
India, bushels	366,987	369,152	375,387	-	1.7
Total 2 countries reporting, bushels	953,865	941,492	928,400	1.4	-
RYE					
Area 11 countries, acres a	25,188	24,633	24,910	-	1.2

a. Includes winter and spring sowings in Italy compiled from official sources and International Institute of Agriculture.

GRAINS: EXPORTS FROM THE UNITED STATES, JULY 1 - MAY 10, 1922-23 AND 1923-24

Commodity	Unit	July 1 1922 to May 12 1923	July 1 1923 to May 10 1924 Prelim.	1924 Week ending April 26 Prelim.	1924 Week ending May 3 Prelim.	1924 Week ending May 10 Prelim.
		1,000	1,000	1,000	1,000	1,000
Exports from the United States:						
Barley	Bu.	17,910	10,134	8	168	5
Corn	"	90,397	18,400	242	383	352
Oats	"	18,145	1,070	3	-	3
Rye	"	43,986	11,568	222	677	5
Wheat	"	138,872	70,671	a/ 499	a/ 801	a/ 642
Wheat flour	Bbls	b 11,927	b 14,082			
Wheat, including flour	Bu.	192,544	134,040			
In transit shipments from Canada						
Wheat	Bu.	100,594	108,494	2,340	2,187	5,189
Wheat flour	Bbls	2,286	b 3,914			

a Includes "Via Pacific Ports." b From July 1 to Mar. 31, not rep. weekly from Atlantic Coast Port
COMPILED FROM: Preliminary Reports of the Bureau of Foreign and Domestic Commerce.

WORLD SUGAR PRODUCTION IN TERMS OF RAW SUGAR.

Country	1922-23	1923-24 Estimates previously published	1923-24 Latest estimates received
	Short tons	Short tons	Short tons
Denmark	94,136	121,000	120,000
Netherlands	a 303,598	274,000	275,000
Hungary	90,259	132,000	137,000
Antigua	14,159	11,000	9,500
Guadeloupe	b 28,048	29,000	28,000
Peru	351,390	336,000	308,000
Australia	342,263	313,264	315,682
World totals	20,435,633	21,706,447	21,683,365

a. Revised from 308,473 short tons.
b. " " 33,600 " "
Willett and Gray, Dr. Gustav Mikusch of Vienna.

CUBAN SUGAR PRODUCTION

Guma Mejer of Havana, Cuba, have raised their estimate of the Cuban sugar production to 4,368,000 short tons, which is an increase of 168,000 short tons over their first estimate of 4,200,000 short tons. They base their revised estimate on the increased yield of cane and the beneficial rains during January and February of this year.

The total Cuban sugar production of all centrals up to May 2, according to Willett and Gray, amounts to 3,997,000 short tons compared with 3,643,000 short tons up to the same date last year. Sixty-four centrals have finished grinding with a total production of 1,207,254 short tons compared with 1,072,982 short tons for the same centrals during the 1922-23 campaign. 115 centrals continue to work as compared with 55 at the same time last year and 148 in 1922.

Weekly Statistical Sugar Trade Journal, May 8, 1924.

UNITED STATES TRADE IN DAIRY PRODUCTS
(9 months ending March 31, 1924)

BUTTER

During the nine months ending March 31, 1924, U.S. exports of butter were less than 4,000,000 pounds, or just about half the quantity exported during the same period of 1923. Much smaller shipments to the United Kingdom account for most of this decrease.

At the same time, imports of butter were twice as large as for the previous season, much larger quantities having been received from Denmark, Canada, and Argentina.

CHEESE

Cheese exports declined from nearly 6,000,000 pounds in 1923 to less than 3,000,000 pounds in 1924, a decrease of 51 per cent. The decrease was due almost entirely to a falling off in exports to European countries.

MILK

The United States continues to send abroad large quantities of condensed, evaporated, and powdered milk. Total exports amounted to 175,000,000 pounds for the nine-month period in 1924 as compared with 114,000,000 pounds during the same months of 1923, an increase of 53 per cent. Though exports of powdered milk fell off about 24 per cent, exports of condensed and evaporated milk were approximately 50 per cent over the same period the preceding season. European countries took about 77 per cent of the evaporated milk, the United Kingdom, Germany, and France being the heaviest purchasers. These same countries and Japan are the best markets for our powdered milk. The bulk of the condensed milk, however, goes to countries outside of Europe, Cuba taking 46 per cent the past season.

Imports of condensed, evaporated, and powdered milk amounted to 10,000,000 pounds this year as against 6,500,000 pounds during the corresponding period a year ago. Of this amount Canada supplied over 80 per cent.

CASEIN

Casein to the amount of 16,500,000 pounds and 12,000,000 pounds was imported into the United States during the nine months ending March 31, 1923 and 1924, respectively, a decrease of nearly 30 per cent. Approximately 80 per cent of these imports come from Argentina.

OLEOMARGARINE

A marked decline is noted in the exports of both animal and vegetable oleomargarine. Canada, the West Indies, and Panama purchase most of the U.S. surplus of this product.

EGGS

Exports of eggs from the United States for the nine-month period under review were 26,000,000 dozen, or 2,000,000 dozen less than a year ago. Approximately 80 per cent of our exports go to Cuba, Canada, and Mexico. Exports of preserved eggs are comparatively unimportant.

About 16,500,000 pounds of dried and preserved eggs and nearly 7,000,000 pounds of egg albumen were imported from foreign countries in 1924. China supplies at least 95 per cent of these imports.

BUTTER: DOMESTIC EXPORTS OF THE UNITED STATES DURING MARCH 1923 AND 1924.

Country to which exported:	(9 months, July-March) July, 1922- March, 1923	(9 months, July-March) July, 1923- March, 1924	March 1923	March 1924
	Pounds	Pounds	Pounds	Pounds
United Kingdom	3,100,128	51	1,120	--
Germany	2,082	64,358	78	5,030
Other Europe	899	740	250	--
Total Europe	3,103,109	65,149	1,448	5,030
Cuba	554,370	535,282	56,629	92,214
Haiti	430,518	390,030	85,898	70,676
Other West Indies	1,168,963	527,739	143,609	77,939
Mexico	668,032	605,561	118,980	68,532
Panama	533,089	535,401	9,977	50,095
Honduras	141,495	136,767	18,786	13,843
Peru	167,088	316,279	14,800	37,642
Other South America	285,438	148,730	25,770	12,116
Philippine Islands	248,471	177,115	24,340	38,470
Other countries	361,781	385,007	30,372	17,873
Total exports	7,692,434	3,873,080	530,609	484,430
Imported from:	**BUTTER: IMPORTS**			
Denmark	4,347,088	9,609,604	6,230	989,270
United Kingdom	35,331	1,578,210	1,412	268,204
Other Europe	33,255	1,361,019	204	82,668
Total Europe	4,415,674	12,548,833	7,846	1,340,142
Canada	2,399,825	5,660,516	47,873	580,670
Argentina	558,283	3,355,553	145,600	1,255,912
New Zealand	3,744,002	3,927,718	2,849,784	71,181
Australia	129,756	32,368	---	11,760
Other countries	15,777	53,318	6,238	8,671
Total imports	11,263,317	25,578,306	3,057,361	3,268,336
Imported from:	**CASEIN: IMPORTS**			
United Kingdom	934,500	120,700	188,400	---
France	705,100	913,300	386,200	312,300
Argentina	12,563,400	9,576,000	2,309,400	1,665,400
Australia	1,026,000	56,000	56,000	---
New Zealand	868,300	663,600	31,400	---
Other countries	406,200	440,700	38,900	6,900
Total imports	16,503,300	11,770,300	3,010,300	1,984,600

Compiled from official records of the Bureau of Foreign and Domestic Commerce.

CHEESE: DOMESTIC EXPORTS OF THE UNITED STATES DURING MARCH 1923 AND 1924.

Country to which exported:	(9 months, July-March) July, 1922 - March, 1923	(9 months, July-March) July, 1923 - March, 1924	March 1923	March 1924
	Pounds	Pounds	Pounds	Pounds
Total European countries	2,267,370	112,254	2,234,682	3,668
Cuba	906,817	756,539	257,756	123,082
Mexico	815,145	604,175	123,056	90,002
Canada	569,518	237,751	398,128	10,601
Panama	263,262	234,003	17,323	19,415
Jamaica	224,840	160,824	31,162	16,990
Other Central America	207,683	202,168	21,485	19,761
Haiti	57,076	70,149	7,424	10,174
Peru	32,024	66,721	2,981	15,996
Other countries	627,450	452,497	104,766	40,473
Total exports	5,971,185	2,897,031	3,198,763	350,162

CHEESE AND SUBSTITUTES: IMPORTS INTO THE UNITED STATES DUPING MARCH, 1923 AND 1924.

Country from which imported:	(9 months, July - March) July, 1922 - March, 1923	(9 months, July - March) July, 1923 - March, 1924	March 1923	March 1924
	Pounds	Pounds	Pounds	Pounds
Italy	15,617,065	25,074,332	1,087,561	1,716,112
Switzerland	11,484,613	12,575,986	1,079,656	934,039
France	2,909,902	3,334,480	461,302	521,470
Netherlands	1,729,870	2,451,815	76,258	223,766
Greece	656,252	1,371,793	131,224	177,675
Norway	333,538	334,552	34,656	51,356
United Kingdom	129,529	468,798	7,704	110,372
Denmark	74,492	272,452	1,666	56,700
Turkey in Europe	55,378	121,452	2,348	73,432
Belgium	27,797	297,765	1,002	70,128
Finland	1,829	101,051	---	17,581
Other Europe	232,211	620,396	23,592	7,716
Total Europe	33,252,476	47,024,872	2,906,969	3,960,347
Canada	4,009,742	1,531,000	4,708	161,610
Argentina	2,791,981	2,284,845	223,546	107,759
Mexico	68,225	173,260	6,562	27,773
Other countries	92,929	101,129	663	6,978
Total Imports	40,215,353	51,115,106	3,142,453	4,264,467

Compiled from official records of the Bureau of Foreign and Domestic Commerce.

MILK(CONDENSED): DOMESTIC EXPORTS OF THE UNITED STATES DURING MARCH 1923 AND 1924.

Country to which exported:	(9 months, July - March) July, 1922- March, 1923	(9 months, July - March) July, 1923- March, 1924	March 1923	March 1924
	Pounds	Pounds	Pounds	Pounds
United Kingdom	1,336,518	481,784	176,153	4,200
Germany	742,494	1,780,763	125,132	42,286
Other Europe	3,017,049	1,317,019	173,135	150,960
Total Europe	5,096,061	3,579,566	474,420	197,446
Cuba	10,792,239	22,866,642	1,473,292	2,791,374
Japan	4,667,867	5,703,991	824,254	472,933
China	2,672,792	2,232,529	409,500	168,000
Hongkong	1,784,789	2,075,972	294,000	95,760
British South Africa	1,328,984	1,355,545	444,400	178,750
Other countries	6,646,482	11,695,462	755,170	1,211,453
Total exports	32,989,214	49,509,707	4,675,036	5,115,716
Country to which exported:	**MILK (POWDERED)**			
Germany	897,460	155,599	205,342	13,850
France	170,333	183,029	6,075	46,571
United Kingdom	470,042	61,641	10,000	23,200
Other Europe	72,348	83,128	3,864	20,204
Total Europe	1,610,183	483,197	225,281	103,825
Cuba	64,179	114,567	11,536	9,728
Mexico	58,123	52,682	3,689	2,043
Canada	51,239	94,389	8,436	8,993
Japan	414,615	758,980	48,804	65,490
Other countries	225,550	336,701	39,991	32,463
Total exports	2,423,889	1,840,516	337,737	222,542
Country to which exported:	**MILK(EVAPORATED)**			
United Kingdom	18,968,244	29,859,854	1,792,902	2,489,800
Russia in Europe	14,534,173	1,256	534,870	---
Latvia	7,385,904	13,625	5,159,016	---
Germany	7,301,252	42,938,903	3,252,240	2,578,251
Ukraine	4,473,971	9,221	---	3,885
France	4,454,581	7,408,498	777,720	122,832
Other Europe	2,671,004	15,050,028	939,760	290,112
Total Europe	59,789,129	95,281,385	12,447,508	5,484,880
Panama	2,430,852	2,586,899	162,862	183,912
Cuba	1,913,911	2,616,221	260,123	81,447
Mexico	1,893,322	1,896,283	214,281	304,040
Peru	1,451,567	3,375,975	183,240	85,430
Philippine Islands	3,630,098	6,367,784	926,200	510,600
Other countries	7,432,326	11,293,425	1,164,694	745,986
Total exports	78,541,205	123,417,972	15,358,908	7,396,295

Compiled from official records of the Bureau of Foreign and Domestic Commerce.

MILK (CONDENSED, EVAPORATED AND POWDERED): IMPORTS INTO THE UNITED STATES DURING MARCH, 1923 AND 1924.

Country from which imported:	(9 months, July - March) July, 1922- March, 1923.	(9 months, July - March) July, 1923- March, 1924.	March 1923	March 1924
	Pounds	Pounds	Pounds	Pounds
United Kingdom	746,120	575,284	82	105,479
Germany	227,359	---	---	---
Netherlands	122,657	848,321	---	66,120
Other Europe	22,796	11,918	---	---
Total Europe	1,118,942	1,435,523	82	171,599
Canada	5,241,562	8,249,124	105,058	1,143,896
New Zealand	1,149	328,967	---	5,065
Other countries	113,481	1,289	57	85
Total imports	6,475,134	10,014,903	105,197	1,320,645

Exported from:	Oleomargarine, Animal and Vegetable: Exports.			
Animal:				
Canada	885,400	294,100	186,800	---
Brit. West Indies	336,100	246,400	57,400	15,200
Panama	144,800	168,900	7,700	18,800
Other countries	232,500	213,900	25,000	17,800
Total Animal	1,598,800	923,300	276,900	51,800
Vegetable:				
Ukraine	1,305,000	---	---	---
Canada	171,600	127,800	95,800	---
Panama	39,100	14,800	1,500	---
Other countries	142,800	86,500	17,500	2,200
Total Vegetable	1,658,500	229,100	114,800	2,200

COMPILED FROM: Official Records of the Bureau of Foreign and Domestic Commerce.

RUSSIAN BUTTER AND EGG EXPORTS.

According to a report from Mr. C. J. Mayer, American Trade Commissioner at Riga, Latvia, Russia expects to export 13,000,000 pounds of butter between October 1, 1923, and October 1, 1924, compared with the 6,247,000 pounds exported during the same period 1922-1923. This would be an increase of 104 per cent.

Russian authorities state that, given a good season, the nation can produce 22,800,000 to 36,100,000 pounds of butter during this period. Efforts are being put forth by the Soviet Government to get Danish dairymen to supervise production at certain dairies in Russia.

Concerning eggs, the same source credits exports with 5 million dozen from October 1, 1922, to October 1, 1923. This commodity is expected to jump to 41,600,000 dozen during the same period for 1923-1924. According to a Russian poultry expert, Professor Positzki, there are at present 82 million hens in Russia.

EGGS(IN SHELL): EXPORTS FROM THE UNITED STATES, MARCH 1923 AND 1924.

Country to which exported:	(9 months, July - March) July, 1922 - March, 1923	July, 1923 - March, 1924	March 1923	March 1924
	Dozen	Dozen	Dozen	Dozen
United Kingdom	4,707,070	3,376,373	30	7
Other Europe	71,806	14,458	6	---
Total Europe	4,778,876	3,390,831	36	7
Cuba	8,466,853	9,532,064	817,830	1,184,536
Canada	8,371,811	6,428,406	2,122,059	1,015,453
Mexico	5,831,609	4,810,878	259,816	452,038
Panama	717,962	675,713	88,920	57,460
Other countries	320,553	760,256	65,779	481,788
Total exports	28,487,709	25,598,128	3,354,440	3,191,282

Country to which exported:	EGGS AND EGG YOLKS (DRIED, FROZEN, PRESERVED)			
	Pounds	Pounds	Pounds	Pounds
United Kingdom	149,150	110,594	30,600	106,430
Other Europe	70,551	48	---	---
Total Europe	219,701	110,642	30,600	106,430
Canada	236,514	115,480	50,475	7,132
Argentina	30,211	---	---	---
Other countries	26,692	51,566	8,625	465
Total exports	513,118	277,688	89,700	114,027

Imported from:	EGGS(IN SHELL): IMPORTS.			
	Dozen	Dozen	Dozen	Dozen
Canada	259,532	140,458	483	319
Hongkong	161,508	171,166	15,957	22,197
China	56,076	24,933	---	---
Other countries	22,254	2,904	1,208	501
Total imports	479,370	339,461	17,648	23,017

Imported from:	EGGS AND EGG YOLKS(DRIED, FROZEN, PRESERVED)			
	Pounds	Pounds	Pounds	Pounds
China	13,475,034	16,027,237	48,150	563,245
Other countries	108,365	506,382	4,635	157,565
Total imports	13,583,399	16,533,619	52,785	720,810

Imported from:	EGG ALBUMEN: IMPORTS.			
	Pounds	Pounds	Pounds	Pounds
China	2,541,805	6,597,215	23,680	118,000
Other countries	97,701	110,399	75,447	---
Total imports	2,639,506	6,707,614	99,127	118,000

Compiled from official records of the Bureau of Foreign and Domestic Commerce.

FERTILIZERS.

CHILE.

Chile is watching carefully the developments in America of "artificial" nitrates. A despatch from Hon. William Collier, American Minister to Chile, under date of March 18, quotes "La Nacion" of Santiago in connection with the effect such developments may have upon the Chilean nitrate industry.

The nitrate beds furnish approximately four-fifths of the Chilean export trade. Any severe curtailment of demand, therefore, cannot help but have very serious effects upon the well-being of that country. In an editorial headed "Chilean Nitrate and the Department of Commerce of the United States," La Nacion speaks of the attempts at producing synthetic nitrates in several countries, particularly in the United States. It follows the activities of the Department of Commerce in its efforts to point out ways and to develop means whereby American industry and agriculture may become independent of foreign sources of nitrate supply. Such projects as Muscle Shoals hold much significance for Chilean nitrate interests.

The impression conveyed is that certain Chilean interests have shown signs of panic at the very real prospect of losing such an important market as the United States, in addition to the markets in other countries where water power is plentiful and cheap. "La Nacion" takes a less desperate tone and suggests that Chileans may do much to preserve their industry. It is suggested that production costs be cut to the limit so that the price of nitrate may be kept low enough to compete with the synthetic product, for some years to come, at least. For consumers, the future holds prospects of cheaper nitrate, both domestically produced and imported.

BELGIUM

Fertilizers are extensively used in Belgium because of limited land area, small farms and intensified agriculture. The cultivated area is at present estimated at about 5 million acres. Following fertilizers are used, nitrogen, nitrate of soda and of lime and sulphate of ammonia, phosphates, superphosphates, basic slag, supra (Manufacturer's name), potash, sylvinite, chloride of potash. These are applied separately and mixed. Nearly every village has a co-operative society. Fertilizers pass from importers or factories through two or three dealers or syndicates of farmers or co-operative societies. The largest is called Boerenbond (League of Peasants) with headquarters at Louvain. This organization alone bought for its members a total of 63,283 short tons of fertilizers worth 19,351,212 francs, during 1921.

FERTILIZERS,-CONT'D.

SWITZERLAND

Cattle raising is of great importance in Switzerland and the stable manure represents the chief supply of Swiss fertilizer. According to Consul H. Armistead Smith at Berne the annual production is:

Stable manure: 12,125,300 short tons.
Liquid manure: 60,626,500 short tons.

The animal manures used are claimed to contain the following chemical properties:

Chemical Properties.	Stable manure.	Liquid manure.
	short tons.	short tons.
Phosphate	30,864	16,535
Potash	61,729	242,506
Nitrogen	49,604	93,696

Stable manure is used chiefly for the grain and vegetable crops and is applied in the autumn months. Liquid manure is used on the pasture lands and is sprinkled over the snow in winter and after each cutting of the grass in summer.

Swiss farmers have found that their lands require potassium salts and phosphate. The most important artificial fertilizers are Thomas phosphate, potassium salts, superphosphates and mixed fertilizer such as (1) Ammonia, superphosphates and potassium, (2) Superphosphates of Bones, and potassium salts.

NETHERLANDS.

Fertilizers are being used for pasture lands and similar uncultivated fields in Holland reports the American Consul at the Hague.

In Holland nearly all ground which is cultivated is treated with chemical fertilizers and the use on pasture land and on hay fields is steadily increasing. Sandy soils are usually fertilized with potash salts, basic slag and nitrogenous fertilizers. On clay ground the use of potash salts is less considerable and on such ground they are usually applied only to sugar beets and potatoes. Superphosphates are chiefly used on the clay soils to supply the necessary phosphoric acid. Some of the supervior clay soils at the present time only receive nitrogenous fertilizers. Pastures and meadows on a clay soil at present receive little chemical fertilizers, phosphoric acid chiefly being used and in a few cases nitrogenous manures are also used on hay fields. On the moorlands phosphoric acid is generally used.

ITALY

Mr. Joseph Emerson Haven, American Consul at Florence, Italy, reports interest on the part of American and English chemists in extensive leucite deposits in that country. Leucite is a silicate of high potash content. Since compounds of silica are readily utilized as plant foods, these leucite deposits are said to represent immense sources of potential wealth. Field and laboratory experiments have shown that finely ground leucite on potatoes and other hoed crops gives as good results as do other potash fertilizers.

The leucite beds occur throughout the length of Italy whenever volcanic action has been present. The labor entailed in its preparation for market is said to be inexpensive, so that the beds only await a sound business organization to inaugurate their exploitation. In connection with any program for the badly needed improvement of Italian agriculture, leucite should play a very prominent part.

CHINA

The use of chemical fertilizer is negligible and is likely to remain so until the cost of such fertilizers can be reduced. The careful use of native fertilizers, including night soil, animal manure, plant waste, bean cake and alluvial mud has sufficed to keep China's fields in a state of high fertility for centuries in spite of most intensive cultivation. The actual cost of available fertilizers in these materials is below price for chemical fertilizers and the methods of preparation transportation and application are established by centuries of custom.

According to Consul Leroy Webber at Hongkong 15,410 tons of chemical fertilizers were imported in 1922, about 3,852 tons in 1921, and 2,568 tons in 1920. In 1922 35 per cent came from America, 28 per cent from England and 24 per cent from Japan. Ammonia sulphate is the fertilizer most in demand. It is used in the rice and fruit culture. Bean cake is used in central and northern China.

The estimated production of night soil in China is about 214,060,000 short tons of which probably 2/3 or 142,710,000 short tons is used as a fertilizer.

POTASH.

Germany and Alsace now practically supply the world with potash though deposits are found in Spain, Eritrea, Tunis, and the United States. During the war, the deposits in the latter countries were worked to a considerable extent. The production figures for Germany were quoted in terms of Potash salts whereas the sales were quoted in both crude salts and K_2O. We have reduced the production figures to a K_2O basis by applying the average percentage of pure potash in the potash salts as shown by the reported sales. Sales in this tabulation refers to sales in Germany and not to exports.

GERMANY - PRODUCTION AND SALES OF POTASH.

Year	Production in terms of		Sales[a] in terms of	
	Salts	Pure Potash K_2O	Salts	Pure Potash K_2O
	Short tons	Short tons	Short tons	Short tons
1911	10,699,483	2,346,378	5,006,264	1,036,082
1912	12,202,476	2,675,982	5,220,606	1,112,462
1913	12,794,953	2,805,912	5,717,959	1,223,960
1914	9,007,453	1,975,280	4,407,829	996,466
1915	7,583,246	1,662,993	3,297,058	749,317
1916	9,527,054	2,089,266	4,162,241	974,407
1917	9,853,171	2,160,783	5,069,320	1,107,019
1918	10,403,784	2,281,532	5,328,879	1,104,134
1919	8,567,115	1,878,753	4,580,171	895,070
1920	12,551,272	2,752,472	4,754,578	1,018,132
1921	10,240,367	2,245,695	-	1,014,116
1922	14,343,480	3,145,500	5,302,063	1,432,990
1923	-	-	-	-

Compiled from reports of the "Stickstofi Syndicat."
a Sales refer to sales in Germany and not to exports.

FRANCE - PRODUCTION OF POTASH, EXPRESSED IN PURE POTASH (K_2O).

Year	France (Alsace)
	Short tons
1913	63,933
1919	101,418
1920	219,551
1921	161,327
1922	228,312
1923	(a) 273,952

Compiled from Documentary Leaflets of the International Institute of Agriculture, Rome, Italy, September 1923.
(a) European Commercial Apr. 12, 1924.

AMOUNTS OF ARTIFICIAL FERTILIZERS USED IN GERMANY, YEARS ENDING APRIL 30, 1911 TO 1923.

Year ending April 30 -	Nitrogen in terms of pure nitrogen. a	Phosphoric acid in terms of P_2O_5 b	Potash in terms of K_2O c
	Short tons	Short tons	Short tons
1911	148,900	552,721	421,630
1912			
1913	182,726	699,308	560,692
1914	231,483	694,449	614,367
1915	108,025	572,094	471,784
1916	80,468	468,478	674,608
1917	88,134	405,646	803,312
1918	101,412	369,271	858,692
1919	126,765	254,631	738,774
1920	175,266	152,117	833,339
1921	233,688	284,393	636,027
1922	330,690	343,918	854,283
1923	317,462	325,178	766,098

a. Up to about 1916-17 the nitrogen was practically all supplied by imports from Chile. In 1916 the German plant was built and since that time has been furnishing increasing supplies. In the year 1922-23 it has been stated by a representative of the Chile organization in Germany that of the amount used only about 13,228 tons were Chilean nitrates, the rest being of German production.

b. Partly imported.

c. Furnished entirely from German supplies.

Sources: 1913-1914 to 1922-23; Niederschrift der 65. Sitzung ueber allgemeine Duengerangelegenheiten am 28. September 1923 im Preussischen Landwirtschaftsministerium.
1910-11 and 1912-13; Furnished by the Deutsches Kalisyndikat, G.M.B.H. Statistische Abteilung.

It has been semi-officially estimated that in 1914 the fertilizer obtained from natural manures amounted to 496,035 tons of nitrogen and 562,173 tons of phosphoric acid. In 1919 the fertilizers from natural manures were estimated to be 209,437 tons of nitrogen and 220,460 tons of phosphoric acid. Statement by Regierungarat Dr. Fischer, quoting Staatsecretary Dr. Ramm, of the Preussische Landwirtschafte Ministerium.

PRODUCTION OF NITRATE IN CHILE.

Year	Number of factories	People employed	Production	World consumption	Visible supply on December 31.
			Short tons	Short tons	Short tons
1894	51	18,092	1,205,698	1,153,518	-
1895	53	22,485	1,441,434	1,209,749	-
1896	53	19,345	1,255,430	1,236,932	-
1897	42	16,727	1,308,132	1,265,927	-
1898	46	15,955	1,448,814	1,328,578	-
1899	58	19,914	1,587,743	1,533,857	-
1900	51	19,672	1,662,035	1,532,626	-
1901	66	20,264	1,464,536	1,589,012	-
1902	80	24,538	1,487,333	1,440,088	-
1903	72	24,445	1,637,223	1,654,402	1,113,692
1904	76	-	1,718,586	1,661,053	1,164,574
1905	90	-	1,934,101	1,803,515	1,305,508
1906	96	-	2,008,549	1,886,808	1,403,397
1907	110	39,653	2,034,835	1,913,068	1,524,151
1908	113	40,835	2,172,605	2,024,553	1,657,894
1909	102	37,792	2,326,912	2,255,533	1,703,903
1910	102	43,533	2,717,627	2,601,944	1,796,147
1911	107	43,876	2,778,924	2,645,904	1,867,076
1912	118	47,800	2,850,382	2,788,217	1,785,012
1913	127	53,161	3,055,856	2,817,327	1,925,387
1914	137	43,979	2,715,357	2,986,095	1,306,596
1915	116	45,506	1,934,857	966,009	1,099,440
1916	123	53,470	3,210,882	1,600,469	932,246
1917	129	56,378	3,308,038	1,773,694	1,286,337
1918	125	56,981	3,151,810	607,330	895,059
1919	125	46,245	1,877,431	1,009,055	2,370,763
1920	97	-	2,781,608	1,184,530	2,328,208
1921	-	-	1,450,133	1,200,390	2,937,200
1922	-	-	1,187,840	1,711,360	2,142,000
1923	-	-	-	2,424,800	ab 1,840,160

Compiled from Sinopsis Estadistica de la Republica de Chile for years 1894-1920, page 96, 1921 and 1922 production figures from Report of American Consul in Chile and Boletin Estadistico. Visible Supply for 1921, 1922 and 1923 taken from Aikman (London) Ltd's. Annual Report, Dec. 31, 1923 and World consumption for 1922 and 1923 from Henry Bath & Son, Ltd., June 30, 1923.

a. Estimating production in December at 213,000 short tons and shipments at 174 short tons to Europe, 151,000 short tons to the United States and 11,000 short tons to other countries.

b. Excluding about 95,000 short tons Reserve Stock in the hands of the American Government.

NATURAL PHOSPHATES - PRODUCTION IN DIFFERENT COUNTRIES 1913, 1919, 1920, 1921 AND 1922.

Country	1913	1919	1920	1921	1922.
	Short tons	Short tons	Short tons	Short tons	Short tons
EUROPE					
Germany	-	36,927	77,161	-	-
Belgium	241,367	100,276	146,350	60,671	74,515
Spain	3,911	27,596	47,284	22,046	27,558
France	329,432	114,495	137,699	125,662	110,230
Norway	834	1,287	-	2,205	-
Russia	27,558	-	420	4,062	-
AMERICA					
Canada	385	24	-	30	90
United States	3,484,531	2,544,596	4,596,414	2,311,578	2,708,002
Guiana (French) a	3,520	-	-	-	-
West Indies (Dutch) a	38,829	11,080	71,615	-	-
ASIA					
Indo-China	-	7,771	14,550	-	-
Japan	20,993	135,437	107,298	-	-
Christmas Island a	168,002	76,851	77,922	96,880	-
AFRICA					
Algeria	508,193	304,279	502,835	444,099	531,644
Egypt	115,135	32,369	126,558	133,570	66,381
Morocco	-	-	-	36,376	90,389
Tunis	2,392,538	893,799	1,134,972	2,015,004	2,158,303
OCEANIA					
Australia	6,663	10,099	14,704	-	-
Palau Islands	99,207	78,263	-	-	-
Makates (French establishments in Oceania) a	90,451	33,223	35,953	65,660	-
Ocean & Nauru Islands	371,475	154,322	385,805	-	-
New Zealand	12,319	4,480	5,887	-	-

Compiled from Documentary Leaflets of the International Institute of Agriculture, Rome, Italy, September 1923.
a. Exports.

SULPHATE OF AMMONIA - PRODUCTION IN DIFFERENT COUNTRIES.

Country	1913	1919	1920	1921	1922.
EUROPE	Short tons	Short tons	Short tons	Short tons	Short tons
Germany	605,163	369,270	564,378	970,024	1,312,839
Belgium	53,572	13,117	27,117	23,854	47,564
Denmark	3,086	2,315	2,094	-	-
Spain	16,534	4,718	2,433	-	-
France	82,121	49,603	55,115	57,320	71,650
Great Britain and Ireland	483,825	445,215	469,120	282,507	338,236
Italy	14,802	7,209	8,866	-	-
Holland	7,716	9,523	12,112	13,187	-
Poland	13,746	-	-	49,616	a 24,602
Portugal	2,205	33	-	6	15
Russia	15,222	-	-	-	-
Sweden	1,518	1,020	7,000	2,873	-
AMERICA					
Canada	10,607	11,765	18,380	17,340	-
United States	19,500	403,219	499,458	358,497	521,995
ASIA					
Japan	8,818	87,073	38,281	-	-
OCEANIA					
Australia	6,048	14,257	13,117	12,701	-

Compiled from Documentary Leaflets of the International Institute of Agriculture, Rome, Italy, September 1923, page 8.
a. First six months.

PRODUCTION OF PHOSPHATE IN EGYPT.

Year	Production	Year	Production
	Short tons		Short tons
1911	13,242	1917	127,571
1912	73,173	1918	34,333
1913	115,135	1919	32,569
1914	79,195	1920	126,558
1915	91,489	1921	134,507
1916	137,796		

Consular Report, Alexandria, Egypt, August 24, 1923.

PRODUCTION AND CONSUMPTION OF FERTILIZER MATERIAL IN NORWAY, 1920-1922.

Material	Production			Consumption		
	1920	1921	1922	1920	1921	1922
	Short tons	Short tons	Short tons	Short tons	Short tons	Short tons
Superphosphates	55,115	33,069	11,023	40,928	-	37,736
Basic slag	-	-	-	1,030	3,500	9,500
Muriate of potash 40%				9,370	9,921	16,094
Portland cement potash 15%	-	-	1,653	-	-	-
Nitrate of lime	143,299	159,834	176,368	51,808	19,070	20,282
Nitrate of soda	19,511	24,251	29,762	44	-	-
Sulphate of ammonia	551	331	715	-	-	-
Cyanamid	33,069	34,722	-	-	-	-
Rock phosphates (apatite)	6,614	2,205	-	-	-	-

Consul General Alban G. Snyder, Christiania, Norway, October 19, 1923.

INDEX